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YANG, CLARA I	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/611,633	Applicant(s) GOLDBERG, STEVEN J.	
	Examiner Clara Yang	Art Unit 2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 16 April 2003 with respect to claim 16 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments filed on 16 April 2003 regarding claims 1 - 15 and 17 - 21 have been fully considered but they are not persuasive.

a. On pages 6 and 11, the Applicant argues that Goldberg omits claiming "canned messages" and that "the bit patterns are not 'messages' sent by communication units, but are, in fact, identification patterns identifying the units themselves." The Examiner agrees with the Applicant that Goldberg teaches that programmed orthogonal bit patterns are used for identifying each portable communication unit (PCU) instead of triggering events. However, as indicated on page 3 of the previous Office Action dated 16 June 2003, Tani teaches using emergency data to indicate a triggering event such as "fire", "intruder," "gas leak", etc. (see Col. 5, lines 46 - 49). Because Tani discloses that memory section 250 stored such emergency data, it is understood that Tani's emergency data are a type of canned messages.

b. On pages 6, 9 -10, and 13, the Applicant further argues that the use of time slots for transmissions is not claimed in Col. 13, lines 7 - 11, which call for the PCUs 18 of a selected subset to transmit "simultaneous, co-channel responses to the poll." Referring to the specification for clarification, Goldberg teaches that central controller 102 controls fixed communication unit (FCU) 101 to transmit a request for each selected subset or portion of PCUs 108 to respond at a specific time and on a specific channel (see Col. 10, lines 18 - 27). As a result, all the PCUs 108 within the same subset transmit their responses at the same time and on the same channel, resulting in simultaneous, co-channel responses. Because Goldberg teaches

assigning a time slot to a subset and that Goldberg's method is only effective when the simultaneous responses from each subset are received at different time slots due each subset having identical PCU 108 identification codes (see Fig. 5, subset bits 508 and unique bit pattern 518), it is inherent that each subset or portion of PCUs 108 is assigned its own time slot and channel in order for central controller 102 to identify each subset. Consequently, Goldberg does teach the fourth limitation of Claim 1, which recites "transmitting, by each of said portion, one of the plurality of orthogonal codes corresponding to the selected message" during its assigned time slot.

c. Regarding the argument on page 6 that the "Applicant asserts that not only was it not well-known to use a random slot to reduce collisions, but also that there is no motivation to utilize such a technique with the cited Goldberg reference", the following are examples of prior art in which random time slots or the Aloha protocol are used to avoid collision:

- U.S. Patent No. 4,799,059 (Grindahl et al.): Grindahl's transponders include a transmission enable circuit which initiates transmission of the RF transponder signals at random times after receipt of the activation signals (see Abstract). Grindahl also teaches that collisions "are further reduced by a circuit which causes transponders to "wake-up" and initiate data transmission at random times" (see Col. 4, lines 45 - 50).

- U.S. Patent No. 4,940,974 (Sojka): As shown in FIG. 5, Sojka discloses that a multi-terminal polling message such as indicated at 40 is transmitted to all terminals in the system, and the terminals are allowed to respond in random "time slots" such as indicated at 41-44 to indicate to the controller that communication activity is desired by the terminal (see Col. 5, lines 51 - 56).

- U.S. Patent No. 5,307,349 (Shloss et al.): Shloss states that the pure slotted ALOHA scheme based upon random selection becomes undesirable when the traffic density increases and teaches using unique combination of slotted ALOHA and fixed slot protocols. The slotted ALOHA protocol provides random slots which are used as a means for vehicle transponders 114 to enter the TDMA communication network 100.

Because the slotted ALOHA protocol, in which time for data transmission is selected at random, is a well known technique, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Goldberg's method such that the slotted ALOHA protocol is used since utilizing random time slots for data transmission reduces collisions in a system with multiple, simultaneous users.

d. In response to the Applicant's argument that "neither Goldberg nor Tani et al. provide motivation…to combine the teachings of Goldberg with the teachings of Tani et al." (see pages 6 - 7 and 10), the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning).

Goldberg's wireless communication system 100 comprises a central controller 110, FCU 101, transmitter 104, and receiver 103 for communicating with a plurality of PCUs 108 (see Fig. 1). In order to determine identify PCUs 108 that are within communication range, Goldberg

discloses that a polling signal is sent to a subset of PCUs 108, causing the PCUs 108 of the selected subset to transmit their identification signals.

Tani also teaches a wireless system comprising a central station 7, security controller 6, repeater 5 (which functions as a transmitter), and antenna 4 for communication with a plurality of transmitter/receivers 2 (see Fig. 1). In addition to being able to transmit its identification code and present state in response to the received "set" data (which also serves as a polling signal in order to determine that all transmitter/receivers 2 have received the "set" data and are in the "watch mode"), Tani's transmitter/receiver 2 is connected to a sensor, which enables transmitter/receiver 1 to detect emergency conditions or triggering events and transmit such event to central station 7 (see Fig. 4; Col. 5, lines 56 - 60; and Col. 6, lines 33 - 41). Tani also teaches other modes (such as "release the watch" and "confirm the present condition") that are performed in the same way as the "watch" mode, wherein signals are sent to the transmitter/receivers 2, causing each to respond by transmitting its identification and present condition (see Col. 6, lines 58 - 64). Consequently, Tani teaches an improvement to a wireless communication system wherein each transmitter/receiver 2 is able to response to polling signals and is also able to detect a trigger event.

e. In response to the Applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (see pages 7 - 8 and 11 - 12), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As stated by the Applicant, Goldberg teaches a method for generating a simulcast response to a poll. Tani, as explained above, also teaches a method of generating a response to a poll (see Fig. 4; Col. 4, lines 55 - 68; Col. 5, lines 1 - 7, 56 - 60, and 65 - 68; and Col. 6, lines 1 - 4). In addition to being able to transmit its identification code and present state in response to the received "set" data (which also serves as a polling signal in order to determine that all transmitter/receivers 2 have received the "set" data and are in the "watch mode"), Tani's transmitter/receiver 2 is connected to a sensor, which enables transmitter/receiver 1 to detect emergency conditions or triggering events and transmit such event to central station 7 (see Fig. 4; Col. 5, lines 56 - 60; and Col. 6, lines 33 - 41). Therefore, Tani's method is in an analogous art to Goldberg's, and Tani does teach an improvement to Goldberg's system.

f. On page 11, the Applicant argues, "Goldberg teaches that specific times are used as opposed to random timeslots." Because the use of random time slots or the Aloha protocol to avoid collision is well known to those of ordinary skill in the art, it would have been obvious to modifying Goldberg's method such that the specific times are randomly selected in order to prevent the simultaneous response from each subset of PUCs 18 from colliding.

g. In response to the Applicant's argument that there is no suggestion to combine the Fish and Goldberg references and that there is no suggestion to combine the Lemelson and Goldberg references (see pages 12 - 14 and 15 - 16), the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, all three references (Fish, Lemelson, and Goldberg) all teach wireless communication systems wherein a central receiver is able to receive a plurality of responses from remote transmitters and methods on how to avoid collisions. Fish's method involves assigning each transmitter its own predetermined time slot for transmitting canned messages (see Col. 1, lines 36 - 42). As shown in Fig. 3, Lemelson's system comprises a plurality of processor units 52 that communicate with control center 42 via radio control links 46 (see Col. 9, lines 51 - 56). Because Lemelson imparts that standard cellular telephone technology can be used for radio control links 46 (see Col. 9, lines 65 - 67), it is understood that time division multiple access (TDMA) is used and that time slots are assigned to each processor unit 52 for responding to inquiries from control center 42 (see Col. 9, lines 53 - 56). Goldberg's method involves assigning a time slot to each subset, wherein the PUCs 18 of each subset respond simultaneously on the same channel during the assigned time slot (see explanation above in Section "b"), and using orthogonal codes in order to allow PCUs 18 within a subset to transmit simultaneous and co-channel responses, thus increasing the number of response transmissions per channel in a given time period (see Fig. 11; Col. 11, lines 58 - 67; and Col. 12, lines 1 - 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify both Fish's and Lemelson's methods as taught by Goldberg because the ability to receive simultaneous, co-channel responses results in effective and efficient use of the frequency spectrum and reduces the amount of time needed for the master station to receive canned messages from all the remote transmitters.

h. In response to applicant's argument that U.S. Patent No. 5,166,664 (Fish) is nonanalogous art (see pages 14 - 15), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular

problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, as mentioned above in Section "g", both Fish and Goldberg teach wireless communication systems wherein a central receiver is able to receive a plurality of responses from remote transmitters and methods on how to avoid collisions. Fish's method involves assigning each transmitter its own predetermined time slot for transmitting canned messages (see Col. 1, lines 36 - 42). Goldberg points out in Col. 1, lines 40 - 44 that problem arises in systems wherein each PCU is assigned to respond at a specific time. Per Goldberg, when communication traffic of such systems increases to a point at which there is insufficient ack-back channel capacity to hand the volume of acknowledgment responses required, poll response is significantly delayed. In Fig. 11, Goldberg illustrates how simultaneous, co-channel responses can provide 2.74 times the number of response transmissions per channel compared to the response transmissions that a conventional system can transmit in a given time period (see Col. 11, lines 62 - 67 and Col. 12, lines 1 - 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fish's method as taught by Goldberg because the ability to receive simultaneous, co-channel responses results in effective and efficient use of the frequency spectrum and reduces the amount of time needed for the master station to receive canned messages from all the remote transmitters.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010

(Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. Goldberg U.S. Patent No. 5,530,437 in view of Tani U.S. Patent No. 4,559,526. The first limitation of Claim 1 ("pre-programming each of a plurality of wireless communication units") is claimed in Col. 12, lines 61 - 67 and Col. 13, lines 1 - 6 of Goldberg. Though the patent lacks the term "orthogonal codes", the bit patterns (or canned messages) are understood to be orthogonal because each bit pattern is maximally different such that all received simultaneously received bit patterns produce an interference bit/symbol pattern that "provides a non-zero probability of correctly identifying at least a portion of said group, and a substantially zero probability of erroneously identifying a portable communication unit not in said group." The fourth limitation of Claim 1 ("transmitting...one of the plurality of orthogonal codes") is claimed in Col 13, lines 7 - 11. Because Goldberg teaches that the portable communication units of each subset or portion simultaneously transmit co-channel responses to a poll, it is implied that each subset is assigned

a response time slot. Though Goldberg does not claim that the time slot is a randomly selected slotted ALHOA time slot, the Examiner takes Official Notice that slotted ALOHA is a commonly used technique for communications resource assignment in radio based telecommunications and that random time slot selection reduces collisions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to assign each subset a randomly selected slotted ALOHA time slot for transmitting a response to a polling signal since the Examiner takes Official Notice that it is desirable to avoid collisions in a multiple access system and that the slotted ALOHA is a suitable method for reducing collisions in a system with multiple, simultaneous users. The second limitation ("detecting...a triggering event") and third limitation ("selecting...one of the plurality of canned messages") are not claimed by Goldberg.

In an analogous art, Tani's transmission method includes: (a) a plurality of wireless communication units (see Fig. 1, transmitter-receiver 2 and Col. 6, line 1) detecting a triggering event (see Figs. 5A and 5B and Col. 6, lines 20 - 57); (b) control circuit 222 (see Fig. 2) determining if the digital signal received from detectors A, B, C, D, E_1 and/or E2 is emergency data, such as "fire", "intruder", "gas leak", etc. (see Col. 5, lines 46 - 49); and (c) control circuit 222 sending the emergency data to transmitting section 23 for transmission to central station 7 (see Fig. 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Goldberg as taught by Tani because the steps of detecting a triggering event and transmitting canned messages regarding the triggering event to a central station provide an inexpensive and easy-to-install means for monitoring an area.

5. Claims 2, 10, 16, and 19 - 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 8,9, 12 - 14 of U.S. Patent No. Goldberg U.S. Patent No. 5,530,437. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

- The limitations of Claim 2 are claimed in Claim 1 of Goldberg U.S. Patent No. 5,530,437 (hereinafter referred to as "Goldberg"). The first limitation ("receiving at least two different canned messages") is claimed in Col. 12, lines 66 - 67 and Col. 13, lines 1 - 2. The second limitation ("decoding at least some of the at least two different canned messages...") is claimed in Col. 13, lines 12 - 14).

- The limitations of Claim 10 are claimed in Claim 8 of Goldberg. The first limitation ("wireless processing device is coupled to a plurality of receivers") is claimed in Col. 14, lines 10 - 15. The second limitation ("wherein the transmission method further comprises...") is claimed in Col. 14, lines 42 - 46.

- The limitations of Claim 16 are claimed in Claims 8 and 12 of Goldberg. The first two limitations ("a transceiver" and "a processor coupled to the transceiver") are claimed in Col. 14, lines 8 - 15. The third and fourth limitations ("wherein the processor is further programmed to: cooperate...and decode...") are claimed in Col. 14, lines 25 - 29 and 42 - 46 and in Col. 15, lines 21 - 26).

- The limitations of Claim 19 are claimed in Claims 8, 9, 11, 12, and 14 of Goldberg. The first limitation ("receive and decode one of the plurality of canned messages") is claimed in Col. 14, lines 25 - 29 and 42 - 46 and Col. 15, lines 18 - 20 and 21 - 26. The second limitation ("transmit a broadcast message") is claimed in Col. 14, lines 57 - 64 and Col. 15, lines 35 - 43.

- The limitation of Claim 20 is claimed in Claim 14 of Goldberg in Col. 15, lines 35 - 43.

- The limitation of Claim 21 is claimed in Claim 9 of Goldberg in Col. 14, lines 49 - 50. In the specifications, Goldberg specifies that the input means (see Fig. 4, input interface 110) couple the processor to a Public Switched Telephone network for communicating with the network (see Col. 3, lines 58 - 60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 - 4, 10 - 12, and 15 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg U.S. Patent No. 5,530,437 in view of Tani U.S. Patent No. 4,559,526.

Referring to Claim 1, Goldberg's transmission method in a wireless communication system comprises the steps of: (a) pre-programming each of a plurality of wireless communication units with a first set of bits (or code) indicating a subset or group that each communication unit belongs to and a second code for uniquely identifying the communication unit within each group (see Fig. 5, subset bits 508 and unique bit pattern 518; and Col. 8, lines 7 - 13); (b) a subset or portion of the plurality of PCU 108 (see Fig. 1) or wireless communication units detecting a poll transmitted by central controller 102 (see Fig. 1 and Col. 3, lines 50 - 54); (c) each PCU 108 of said polled subset selecting its pre-programmed or canned unique code to be transmitted in response to the triggering event (see Fig. 8, step 806 and 808); and (d) each PCU 108 of said polled subset transmitting its unique code during a selected time-slot (see Col. 4, lines 43 - 45). Here it is understood that: (a) the first set of code indicating a subset/group and the second code indicating a unique identification are canned messages; (b) a polling signal transmitted by central controller 102 is a triggering event; and (c) central controller 102 randomly selects the assigned time-slot. Goldberg further teaches that a subset of PCUs 108 is synchronized and responds to the polling signal using a designated channel and time slot such that the three responses are co-channel and received by central controller 102 within one-half of the duration of one bit of the response (see Fig. 11, responses 1102, 1106, and 1110; Col. 11, lines 11 - 14, 18 - 20, and 62 - 67; and Col. 12, lines 1 - 4, and 13 - 19); thus, it is understood that a

multiple access protocol, such as ALOHA or slotted ALOHA is used. Because Goldberg specifies that the unique codes for PCUs 108 are maximally different such that all received interference bit patterns or symbol patterns (see Figs. 6 and 7) can positively identify all responding PCUs, it is understood that the unique codes are orthogonal codes. Consequently, the interference symbol pattern provides a non-zero probability of correctly identifying at least a portion of the group of PCUs and a substantially zero probability of erroneously identifying a PCU not in the group (see Col. 2, lines 1 - 5). Goldberg's, however, lacks the steps of: (a) each PCU detecting a triggering event that does not originate from and is not controlled by the wireless communication system; and (b) each PCU selecting one of the plurality of canned messages in response to the triggering event. In an analogous art, Tani's transmission method includes: (a) a plurality of wireless communication units (see Fig. 1, transmitter-receiver 2 and Col. 6, line 1) detecting a triggering event (see Figs. 5A and 5B and Col. 6, lines 20 - 57); (b) control circuit 222 (see Fig. 2) determining if the digital signal received from detectors A, B, C, D, E_1 and/or E2 is emergency data, such as "fire", "intruder", "gas leak", etc. (see Col. 5, lines 46 - 49); and (c) control circuit 222 sending the emergency data to transmitting section 23 for transmission to central station 7 (see Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Goldberg as taught by Tani because the steps of detecting a triggering event and transmitting canned messages regarding the triggering event to a central station provide an inexpensive and easy-to-install means for monitoring an area.

Regarding Claim 2, Goldberg's method further comprises the steps of: (a) receiving at least two different canned messages (i.e., the unique identification codes) sent simultaneously during a single time slot, thereby producing an interference symbol pattern (see Figs. 6 and 7;

Col. 8, lines 46 - 51; and Col. 9, lines 19 - 28 and 38 - 45); and (b) decoding at least some of the at least two different canned message from the interference symbol pattern (see Fig. 6, and Col. 9, lines 29 - 37).

Regarding Claim 3, Goldberg also teaches the steps of: (a) receiving at least two identical canned messages (i.e., the first set of codes indicating a subset/group) sent simultaneously during a single time slot, thereby producing a reinforced symbol pattern; and (b) decoding, from the reinforced symbol pattern, one of the plurality of canned messages received. (See Col. 10, lines 30 - 34, and Col. 12, lines 18 - 19.)

Regarding Claim 4, Goldberg teaches that each PCU 108 within a subset transmits a common code indicating the subset it belongs to in addition to its unique identification code, which is understood to be an orthogonal code as mentioned in Claim 1 (see Col. 10, lines 27 - 34).

Regarding Claim 10, Goldberg's transmission method, as shown in Fig. 1, includes coupling a central controller 102 or wireless processing device to a plurality of receivers 103 and 105, wherein central controller 102 examines canned messages (i.e., the common codes and unique codes) received by receivers 103 and 105 (see Col. 10, lines 27 - 63). Goldberg further teaches that central controller 102 extracts additional information, such as a probable location of each identified PCU 108, for each canned message received. (See Col 10, lines 54 - 63.)

Referring to Claim 11, Goldberg's PCU 108 or wireless communication unit, as shown in Fig. 2, comprises: (a) a transceiver 204; (b) a processor 212 coupled to transceiver 204 for processing the communications; (c) a read-only memory (ROM) 232 coupled to the processor for storing software for programming the processor (see Col. 5, lines 56 - 60); (d) a real-time clock 226 coupled to the processor for providing a time signal (see Col. 5, lines 38 - 39); and (e) user

controls 230 coupled to the processor for controlling the wireless communication unit (see Col. 5, lines 62 - 65). PCU 108 also has a random access memory (RAM) 214 for storing operating variables (see Col. 5, lines 40 - 49). In addition, the response bit pattern 218 that is stored in RAM 214 comprises two sets of codes. The first set is a common code indicating which subset/group that each PCU 108 belongs to; the second set is a unique code identifying each PCU 108 within the group (see Col. 8, lines 27 - 32). Here it is understood that both sets of codes are orthogonal codes representing canned messages as explained above in Claim 1. Goldberg teaches that when a plurality of the orthogonal codes are received simultaneously, the resulting interference symbol pattern provides a non-zero probability of correctly identifying at least a portion of the group of PCUs and a substantially zero probability of erroneously identifying a PCU not in the group (see Col. 2, lines 1 - 5). Processor 212 is programmed to: (a) select its unique code as a selected message to be transmitted in response to receiving a polling signal from central controller 102 (see Col. 8, lines 40 - 45 and Col. 10, lines 27 - 30), which is understood to be a triggering event; and (b) cooperate with the transceiver to transmit the orthogonal code corresponding to the selected message (i.e., its unique code) during a time slot selected by central controller 102 (see Col. 4, lines 43 - 45 and 54 - 57). As explained above in Claim 1, it is understood that central controller 102 assigns each subset a randomly selected slotted ALOHA time slot. Goldberg's processor 212 of PCU 108, however, fails to cooperate with the control interface to detect a triggering event that does not originate from and is not controlled by the wireless communication system. Tani's transmitter-receiver 2 or wireless communication unit, as shown in Fig. 2, has a first control section 22 that is programmed to: (a) cooperate with detecting section 21 to detect a triggering event, such as a fire or intrusion (see Col. 2, lines 63 - 68; Col. 3, lines 1 and 33 - 46; and Col. 6, lines 33 - 41); (b) selects one of the

plurality of canned message as a selected message to be transmitted in response to the triggering event (see Col. 5, lines 40 - 49); and (c) cooperates with the transmitting section 23 to transmit one of the codes corresponding to the message (see Col. 5, lines 49 - 55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wireless communication unit of Goldberg as taught by Tani because the ability to detect a triggering event and transmit a code identifying the triggering event to a central station provides an inexpensive and easy-to-install means for monitoring an area.

Regarding Claim 12, Goldberg imparts that in addition to transmitting its unique code, it is preferable that PCU 108 sends its common code, which is decoded by central controller 102 (see Col. 10, lines 30 - 34). Here it is understood that the common code is additional data.

Regarding Claim 15, because Goldberg teaches that central controller 102 is able to send a broadcast message to specific PCUs 108 (see Col. 4, lines 27 - 57), thus prompting only the selected PCUs 108 to generate and send a canned message, it is understood that the processor of Goldberg's PCU 108 is programmed to cooperate with transceiver 204 (see Fig. 2) to receive from central controller 102 a message for selectively controlling PCU 108 as to whether PCU 108 is allowed to generate one of a plurality of canned messages.

Referring to Claim 16, Goldberg's central controller 102 or wireless processing device comprises: (a) transceivers formed by receivers 103, 105 and transmitter 104 for receiving a plurality of common and/or unique codes (see Fig. 1; Col. 4, lines 65 - 67; and Col. 5, lines 1 - 4); and (b) a processor 404 coupled to the transceivers via encoder/transmitter controller 414, communication interface 402, and radio links (see Fig. 4 and Col. 4, lines 1 - 12). Here it is understood that common codes and unique codes are canned messages. Goldberg imparts that each PCU 108 stores two sets of codes. The first set is a common code indicating which

subset/group that each PCU 108 belongs to; the second set is a unique code identifying each PCU 108 within the group (see Col. 8, lines 27 - 32). Because Goldberg specifies that the codes for PCUs 108 are maximally different such that all received interference bit patterns or symbol patterns (see Figs. 6 and 7) can positively identify all responding PCUs, it is understood that the common and unique codes are orthogonal codes. Due to the usage of orthogonal codes, the interference symbol pattern resulting when a plurality of canned messages are received simultaneously by central controller 102 provides a non-zero probability of correctly identifying at least a portion of the group of PCUs and a substantially zero probability of erroneously identifying a PCU not in the group (see Col. 2, lines 1 - 5). Processor 404 of central controller 102 is programmed to: (a) cooperate with the transceivers to receive at least two different canned messages sent during a signal time slot (see Col. 6, lines 44 - 48; Col. 7, lines 8 - 11 and 56 - 61; and Col. 8, lines 46 - 58); and (b) decode at least some of the at least two different canned messages from the interference symbol pattern shown in Fig. 7 (see Col. 10, lines 51 - 54). Goldberg, however, is silent on PCU 18 having a plurality of different canned messages to select from in response to a triggering event.

In an analogous art, Tani's wireless processing device, as shown in Fig. 3, comprises: (a) a transmitting section 51 and receiving section 52 for receiving a plurality of canned messages (see Col. 4, lines 1 - 13; Col. 5, lines 56 - 68; and Col. 6, lines 1 - 4); and (b) a second control section 61 for cooperating with receiving section 52 to receive a plurality of canned messages and processing the plurality of canned message (see Col. 4, lines 14 - 20; Col. 5, lines 62 - 68; and Col. 6, lines 44 - 48). Per Tani, each transmitter/receiver 2 selects and transmits a canned message in response to a trigger event (see Col. 5, lines 22 - 55).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Goldberg as taught by Tani because the ability to transmit canned messages in response to a trigger event in addition to the ability to respond to a polling signal enhances the functionality of a polling wireless communication system.

Regarding Claim 17, Goldberg's processor 404 of central controller 102 is further programmed to: (a) cooperate with the transceivers to receive at least two identical canned messages (i.e., common codes) during a single time slot, thereby producing a reinforced symbol pattern (see Col. 6, lines 44 - 48; Col. 8, lines 46 – 51; and Col. 10, lines 30 – 34); and (b) decode from the reinforced symbol pattern one of the plurality of canned messages received (see Figs. 6 and 7 and Col. 10, lines 30 – 34).

Regarding Claim 18, Goldberg imparts that in addition to transmitting its unique code, it is preferable that PCU 108 sends its common code, which is decoded by central controller 102 (see Col. 10, lines 30 – 34). Here it is understood that the common code is additional data.

Regarding Claim 19, Goldberg's processor 404 is programmed to: (a) receive and decode one of the canned messages as described in Claim 16; and (b) cooperate further with the transceivers to transmit a broadcast message directing a plurality of PCUs 108 that transmitted a canned message but remain unidentified to retransmit their responses (see Col. 10, lines 64 – 67). Because central controller 102 is able to send messages using selective call addresses (see Col. 4, lines 34 – 37) and to request only unidentified PCUs 108 to retransmit their responses, it is understood that processor 404 is programmed to direct any of the PCUs to behave in a specified manner.

Regarding Claim 20, because Goldberg's processor 404 is able to poll specific PCUs 108, which are then triggered to send their caned messages (i.e., unique codes), it is understood that

processor 404 selectively controls which PCU 108 is allowed to generate a canned message (see Col. 4, lines 25 – 57).

Regarding Claim 21, as shown in Figs. 1 and 4, Goldberg's central controller 102 is coupled to a Public Switched Telephone network via telephone input 110 (see Col. 3, lines 58 – 60) for communicating with the network.

8. Claims 1, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fish U.S. Patent No. 5,166,664 in view of Goldberg U.S. Patent No. 5,530,437.

Referring to Claim 1, Fish's method, as shown in Fig. 7, comprises: (a) pre-programming each plurality of transmitters 402 (see Col. 3, lines 27 – 32) with a plurality of codes (see Encoder 415) corresponding to a plurality of sensor conditions such as intrusion, fire, smoke, etc. (see Col. 4, lines 39 – 44, and Col. 10, lines 49 – 54); (b) a portion of the plurality of transmitters 402 detecting a triggering event (see Col. 10, lines 59 – 67, and Col. 11, lines 1 – 4); (c) said portion of the plurality of transmitters 402 selecting one of the plurality of canned messages as a message to be transmitted (see Col. 10, lines 59 – 65); and (d) said portion of the transmitters 402 transmitting the codes during an assigned time slot (see Col. 11, lines 13 – 20). Here it is understood that the time slot is a randomly selected slotted ALOHA time slot because slotted ALOHA is a well known multiple access protocol. Fish, though, fails to teach the use of orthogonal codes.

In an analogous art, Goldberg specifies that the unique codes for PCUs 108 are maximally different such that all received interference bit patterns or symbol patterns (see Figs. 6 and 7) can positively identify all responding PCUs, it is understood that the unique codes are orthogonal codes. Consequently, the interference symbol pattern provides a non-zero

probability of correctly identifying at least a portion of the group of PCUs and a substantially zero probability of erroneously identifying a PCU not in the group (see Col. 2, lines 1 - 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Fish as taught by Goldberg because the use of the slotted ALOHA protocol and orthogonal codes enable a receiver or central controller to correctly identify the interfering messages while increasing the number of response transmissions per channel in a given time slot, thus improving the system's functionality and efficiency.

Regarding Claim 5, Fish's transmission method further comprises the steps of: (a) determining that one of the plurality of canned messages has been transmitted by at least one of the plurality of transmitters 402 (see Col. 11, lines 37 - 52); and (b) sending a signal via a polling means for individually triggering the transmitters to identify the respective sensor that actuated the transmitter (see Col. 15, lines 9 - 11). Here it is understood that the signal is a broadcast signal.

Regarding Claim 7, Fish's transmission method also includes the steps of: (a) producing a first generation of the sensor sequence or canned message in response to the triggering event; and (b) preventing a second generation of the canned message for a predetermined time period, which is in the magnitude of seconds, after the first generation (see Fig. 8 and Col. 11, lines 5 - 12).

9. Claims 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fish U.S. Patent No. 5,166,664 and Goldberg U.S. Patent No. 5,530,437 as applied to claim 1 above, and further in view of Reis et al. U.S. Patent No. 5,973,613.

Regarding Claims 6, 8, and 9, Fish and Goldberg teach the steps of: (a) determining that one of the plurality of canned messages has been transmitted by at least one of the plurality of transmitters 402 (see Col. 11, lines 37 - 52); and (b) sending a signal via a polling means for individually triggering the transmitters to identify the respective sensor that actuated the transmitter (see Col. 15, lines 9 – 11). Because the polling or broadcast signal is transmitted only when a sensor sequence has been received, it is understood that the broadcast signal indicates that one of the canned messages has been received. Fish and Goldberg, though, fail to impart the step of sending a broadcast message indicating that senders are to cease transmission or generation of one of the canned message unless explicitly instructed to do so by the wireless processing device. Fish and Goldberg are also silent on the step of selectively controlling specific wireless communication units.

In an analogous art, Reis' transmission method includes interrogator 7 (see Fig. 3) or wireless processing device sending "broadcast commands" that are commands for execution by all awake pagers or wireless communication units (see Col. 16, lines 47 - 48). One of the commands, as shown in Table 1, is "ALL_SLEEP" (see Col. 17, lines 11 - 16). Here it is understood that if a pager ID code is omitted in the argument field, all active pagers are put to sleep. Consequently, by putting all active pagers to sleep, interrogator 7 prevents the pagers from transmitting any data until interrogator 7 transmits a wake-up signal and a command signal requesting data (see Table 1, and Col. 14, lines 16 - 21). Reis' transmission method also comprises interrogator 7 sending "directed commands" that are commands directed to an addressed pager for execution. As shown in Table 1, one such directed command includes "CHECK_IN", a command directing a specific pager to transmit its IC code and status to interrogator 7. Here it is understood that the pager's status is a canned message.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Fish and Goldberg as taught by Reis because Reis' method provides enhanced control of the system and enables a user to handle an alarm condition on an individual basis.

10. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al. U.S. Patent No. 6,054,928 in view of Goldberg U.S. Patent No. 5,530,437.

Referring to Claim 11, Lemelson's prisoner sensor/processor unit 52, as shown in Fig. 4, comprises: (a) a transceiver 96; (b) a microprocessor control and routing circuitry 51 coupled to the transceiver (see Col. 10, lines 36 - 38); (c) a ROM 54 for permanent storage of control programs and/or data and a RAM 58 for collecting sensor data, both memory device coupled to microprocessor 51 (see Col. 11, lines 13 - 18); (d) a clock 56 for providing time references (see Col. 11, lines 18 - 19); and (e) interface 110 for controlling prisoner sensor/processor unit 52 (see Col. 10, lines 57 - 62). Here it is understood that the time references provided by clock 56 are for data transmission. Microprocessor 51 is programmed to detect a triggering event (see Fig. 25, block 382; Col. 24, lines 36 - 39, 43 - 42, and 63 - 67). Because Lemelson conveys that appropriate warning and dispatch messages may be issued depending on the circumstances or triggering event (see Col. 24, lines 12 - 13), it is understood that prisoner sensor/processor unit 52 transmits canned messages to monitoring control center 42. Consequently, microprocessor 51 is programmed to select and transmit one of the canned messages in response to the triggering event. Lemelson, however, fails to teach that the pager's memory is pre-programmed with a plurality of orthogonal codes corresponding to a plurality of canned messages and that processor 2 is programmed to transmit the selected message during a randomly selected slotted ALOHA time slot.

In an analogous art, Goldberg's PCU 108 has a processor that is programmed to: (a) select its unique code as a selected message to be transmitted in response to receiving a polling signal from central controller 102 (see Col. 8, lines 40 - 45 and Col. 10, lines 27 - 30), which is understood to be a triggering event; and (b) cooperate with the transceiver to transmit the orthogonal code corresponding to the selected message (i.e., its unique code) during a time slot selected by central controller 102 (see Col. 4, lines 43 - 45 and 54 - 57). As explained above in Claim 1, it is understood that central controller 102 assigns each subset a randomly selected slotted ALOHA time slot. Goldberg specifies that the common codes and unique codes for PCUs 108 are maximally different such that all received interference bit patterns or symbol patterns (see Figs. 6 and 7) can positively identify all responding PCUs, it is understood that both codes are orthogonal codes. Consequently, when a plurality of the orthogonal codes are received simultaneously, the resulting interference symbol pattern provides a non-zero probability of correctly identifying at least a portion of the group of PCUs and a substantially zero probability of erroneously identifying a PCU not in the group (see Col. 2, lines 1 - 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wireless communication unit of Lemelson as taught by Goldberg because the slotted ALOHA protocol and orthogonal codes enable a receiver or central controller to correctly identify the triggering event(s) from interfering messages while increasing the number of response transmissions per channel in a given time slot, thus improving the system's functionality and efficiency.

Regarding Claim 13, Lemelson teaches a processor that is programmed to: (a) save a time-stamped record in the memory whenever the processor transmits the selected message (see Col. 13, lines 45 - 49); (b) receive a broadcast message directing any of a plurality of

prisoner sensor/processor units 52 to behave in a specified manner (see Col. 11, lines 6 - 12 and Col. 13, lines 40 - 42); (c) check time T to determine whether or not it is greater than or equal to a preset value K (see Fig. 25, decision block 384 and Col. 25, lines 1 - 3); and (c) behave in a specified manner when the check is positive (see Col. 25, lines 3 - 29). Because Lemelson teaches that K is a time interval that must be met or exceeded before additional data or alarm messages can be sent to monitoring control center 42 and that clock 56 provides time stamps for recorded monitoring information (see Col. 11, lines 18 - 26), it is understood that T is determined by comparing the current time provided by clock 56 with the time stamp of the previously transmitted data.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg U.S. Patent No. 5,530,437 and Tani U.S. Patent No. 4,559,526 as applied to claim 11 above, and further in view of Fish U.S. Patent No. 5,166,664.

Goldberg's processor 212 of PCU 18, as modified by Tani, is programmed to produce a first generation of a canned message in response to the triggering event (see Tani, Col. 5, lines 40 - 60). Goldberg and Tani, however, are silent on processor 212 to generate the canned message again once a predetermined time period after the first generation lapses.

In an analogous art, Fish's processor (see Fig. 7, modulator 414, encoder 415, and sensors logic 419) repeatedly transmits a canned message when a sensor is actuated (see Col. 11, lines 1 - 4 and 13 - 20). As shown in Fig. 8, a second generation of a canned message is prevented for a predetermined time period after the first generation (see Col. 11, lines 5 - 12).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the processor Goldberg and Tani as taught by Fish because a second generation of a canned message once a predetermined time period after the first

generation lapses ensures that the canned message is received by a central controller and confirms that a triggering event was detected.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent No. 4,799,059 (Grindahl et al.): Grindahl's transponders include a transmission enable circuit which initiates transmission of the RF transponder signals at random times after receipt of the activation signals (see Abstract). Grindahl also teaches that collisions "are further reduced by a circuit which causes transponders to "wake-up" and initiate data transmission at random times" (see Col. 4, lines 45 – 50).
- U.S. Patent No. 4,940,974 (Sojka): As shown in FIG. 5, Sojka discloses that a multi-terminal polling message such as indicated at 40 is transmitted to all terminals in the system, and the terminals are allowed to respond in random "time slots" such as indicated at 41-44 to indicate to the controller that communication activity is desired by the terminal (see Col. 5, lines 51 - 56).
- U.S. Patent No. 5,307,349 (Shloss et al.): Shloss states that the pure slotted ALOHA scheme based upon random selection becomes undesirable when the traffic density increases and teaches using unique combination of slotted ALOHA and fixed slot protocols. The slotted ALOHA protocol provides random slots which are used as a means for vehicle transponders 114 to enter the TDMA communication network 100.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to

37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

CY
June 16, 2003

BRIAN ZIMMERMAN
PRIMARY EXAMINER